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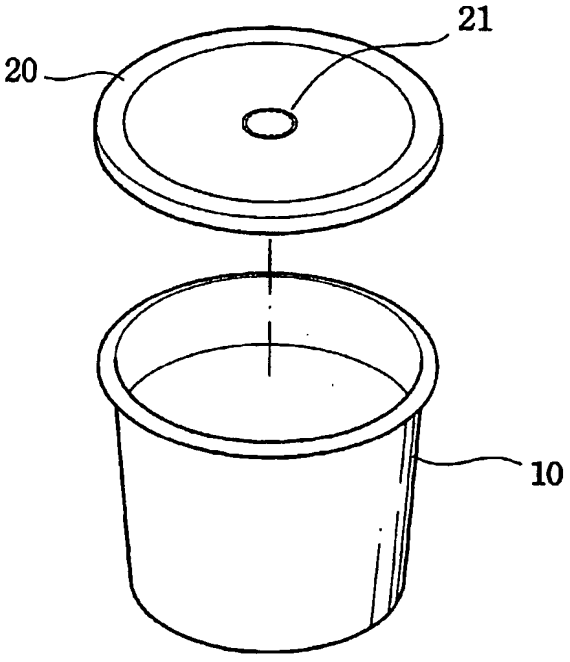
(54) Title: A COOKING STATE AND FINISHING INDICATOR OF INSTANT FOODS



(57) Abstract: Disclosed is a cooking state and completion indicator of instant foods such as instant noodles, which indicates a cooking state of the instant foods to allow consumers to easily identify the cooking state quickly, thereby allowing the consumers to ingest the cooked instant foods and to approximate a cooking completion time of the instant foods to prevent the consumers from wasting time while waiting for the instant foods to be cooked. The cooking state and completion indicator is characterized in that pattern layers with various heights are installed in a cover (20) of a disposable vessel for containing the instant foods, a temperature-sensitive material is packed in the pattern layers, and a message member (40) is positioned under the pattern layers. When the cover of the disposable vessel is closed after hot water is placed into the disposable vessel, the pattern layers become transparent in such as way that a pattern layer with a lowest height becomes firstly transpartent and a pattern layer with a highest height becomes transparent last of all, thereby letters or drawings marked on the message member positioned under the pattern layers are gradually revealed through the transparent pattern layers to allow the consumers to easily confirm the cooking state of the instant foods. When the letters or drawings on the message member (40) are completely revealed because the pattern layers become completely transparent, a cooking of the instant foods is completed.

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A COOKING STATE AND FINISHING INDICATOR OF INSTANT FOODS

Technical Field

The present invention pertains to a cooking state and completion indicator of instant foods such as instant noodles, which indicates a cooking state of the instant foods to allow consumers to easily identify the cooking state quickly, thereby allowing the consumers to ingest the cooked instant foods and to approximate a cooking completion time of the instant foods to prevent the consumers from wasting time while waiting for the instant foods to be cooked. The cooking state and completion indicator of the present invention is characterized in that pattern layers with various heights are installed in a cover of a disposable vessel for containing the instant foods, a temperature-sensitive material is packed in the pattern layers, and a message member is positioned under the pattern layers. When the cover of the disposable vessel is closed after hot water is placed into the disposable vessel, the pattern layers become transparent in such a way that a pattern layer with a lowest height becomes firstly transparent and a pattern layer with a highest height becomes transparent last of all, thereby letters or drawings marked on the message member positioned under the pattern layers are gradually revealed through the transparent pattern layers to allow the consumers to easily confirm the cooking state of the instant foods. When the letters or drawings on the message member are completely revealed because the pattern layers become completely transparent, the cooking of the instant foods is completed.

Background Art

Generally, instant foods, for example instant noodles popular among many consumers such as children and women are contained in a disposable vessel without a separate cooking device. In this regard, a sealing member such as a

polyester film, first melts and then is attached to a top part of a main body of the disposable vessel. In order to cook the instant foods, the consumers separate a portion of the sealing member from the main body of the disposable vessel, inject hot water into the disposable vessel containing the instant foods, and wait until the instant foods cook sufficiently to consume them.

However, the instant foods such as the instant noodles contained in a conventional disposable vessel are disadvantageous in that because the consumers cannot confirm whether the instant foods are well cooked or not unless they open a portion of the sealing membrane to check a cooking state or ingest the instant foods, the instant foods may be undesirably swollen or gelatinized for a long or short time. In detail, when the instant foods are swollen or gelatinized using hot water for a long time, a taste of the instant foods is poor. Furthermore, when the sealing member is removed prior to a set time from the disposable vessel, heat of the hot water quickly dissipates, thus the instant foods must be swollen for a prolonged time, or they are insufficiently swollen or gelatinized, thus the taste of the instant foods becomes poor. Accordingly, the instant foods must be swollen or gelatinized for an optimum time, but it is difficult to appropriately swell or gelatinize the instant foods through a predetermined method because of various factors, such as temperature changes of water.

Efforts have been made to avoid the above disadvantages. For example, reference may be made to the utility model which has been made by the applicant of the present invention, Korean Utility Model Laid-Open Publication No. 2002-27638, which discloses a cover applied to a disposable vessel for containing instant foods. At this time, a shortening oil as a temperature-sensitive material is put on the cover and the shortening oil on the cover is coated with a transparent material. When heat emitted from hot water poured into the instant foods in the disposable vessel is transferred to the shortening oil, the opaque shortening oil becomes transparent in time. The shortening oil is completely transparent after a predetermined time at which the instant foods are appropriately swollen, thereby consumers easily confirm the completion of

cooking of the instant foods.

However, the above utility model is disadvantageous in that the consumers can confirm only the completion of cooking of the instant foods, but a cooking state of the instant foods is not indicated. Accordingly, how long do the consumers must wait until the instant foods are sufficiently cooked is unknown.

Disclosure of the Invention

Accordingly, the present invention has been made keeping in mind the above problems occurring in the prior art, and an aspect of the present invention is to provide a cooking state and completion indicator of instant foods, which indicates a cooking state of the instant foods to allow consumers to easily identify the cooking state quickly, thereby allowing the consumers to consume the cooked instant foods and to approximate a cooking completion time of the instant foods to prevent the consumers from wasting time while waiting for the instant foods to be cooked.

Additional aspects and/or advantages of the invention will be set forth in part in the description which follows and, in part, will be obvious from the description, or may be learned by practice of the invention.

The above and/or other aspects are achieved by providing a cooking state and completion indicator of instant foods characterized in that pattern layers with various heights are installed in a cover of a disposable vessel for containing the instant foods, a temperature-sensitive material is packed in the pattern layers, and a message member is positioned under the pattern layers. When the cover of the disposable vessel is closed after hot water is poured into the disposable vessel, the pattern layers become transparent in such a way that a pattern layer with a lowest height becomes firstly transparent and a pattern layer with a highest height becomes transparent last of all, thereby letters or drawings marked on the message member positioned under the pattern layers are gradually revealed through the transparent pattern layers to allow the consumers to easily identify the

cooking state of the instant foods. When the letters or drawings on the message member are completely revealed because the pattern layers become completely transparent, the consumers confirm that a cooking of the instant foods is completed.

Therefore, the present invention is advantageous in that the cooking state and completion indicator indicates a cooking state of the instant foods to allow consumers to easily identify the cooking state quickly, thereby allowing the consumers to ingest the cooked instant foods and to approximate a cooking completion time of the instant foods to prevent the consumers from wasting time while waiting for the instant foods to be cooked.

Brief Description of the Drawings

The above and other objects, features and other advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

FIG. 1 illustrates a perspective view of a disposable vessel for containing instant noodles, to which an indicating unit of the present invention is applied;

FIGS. 2A to 2C schematically illustrates sectional views of disposable vessels for containing the instant noodles, to which the indicating unit of the present invention is applied;

FIGS. 3A and 3B illustrate sectional views of indicating units according to the present invention;

FIG. 4 illustrates the indicating unit of FIG. 1 or FIGS. 2A to 2C, which indicates a cooking state of instant foods progressing with time; and

FIG. 5 illustrates a perspective view of a conventional indicator for indicating the completion of instant noodles being cooked applied to a disposable vessel for containing instant noodles, and a sectional view of an indicating unit constituting the conventional indicator.

Best Mode for Carrying Out the Invention

Reference should now be made to the drawings, in which the same reference numerals are used throughout the different drawings to designate the same or similar components.

As shown in the drawings, FIG. 1 illustrates a perspective view of a disposable vessel for containing instant noodles, to which an indicating unit of the present invention is applied, FIGS. 2A to 2C schematically illustrates sectional views of disposable vessels for containing the instant noodles, to which the indicating unit of the present invention is applied, FIGS. 3A and 3B illustrate sectional views of indicating units according to the present invention, FIG. 4 illustrates the indicating unit of FIG. 1 or FIGS. 2A to 2C, which indicates a cooking state of instant foods progressing with time, and FIG. 5 illustrates a perspective view of a conventional indicator for indicating the completion of instant noodles being cooked applied to a disposable vessel for containing instant noodles, and a sectional view of an indicating unit constituting the conventional indicator.

The cooking state and completion indicator includes an indicating unit 21, 31 combined with a cover 20 or a sealing member 30 of a disposable vessel for containing the instant foods, and having therein a plurality of pattern layers with various heights, a temperature-sensitive material 22, 32 filling the pattern layers of the indicating unit, and a message member 40 positioned under the pattern layers. When the cover 20 of the disposable vessel is closed after hot water is poured into the disposable vessel, pattern layers become transparent in such a way that a pattern layer with a lowest height becomes firstly transparent and a pattern layer with a highest height becomes transparent last of all, thereby letters or drawings marked on the message member 40 positioned under the pattern layers are gradually revealed through the transparent pattern layers to allow the consumers to easily identify the cooking state of the instant foods. When the letters or drawings on the message member 40 are completely revealed

because the pattern.layers become completely transparent, the consumers confirm that a cooking of the instant foods is completed.

With reference to FIGS. 1 and 2A, the cooking state and completion indicator according to the present invention is provided with the indicating unit 21 installed in the cover of the disposable vessel to allow the consumers to identify the cooking state and the cooking completion of the instant foods.

Meanwhile, in case that the sealing member 30 made of a film material such as polyethylene is melted and attached to a top part of a main body 10 of the disposable vessel without the separate cover, the indicating unit 31 may be installed on the sealing member 30 as shown in FIG. 2B. Additionally, in case that the sealing member 30 is attached to the top part of the main body 10 of the disposable vessel and the cover 20 having the indicating unit 21 is combined with the main body 10 of the disposable vessel as shown in FIG. 2C, the consumers may completely remove the sealing member 30 from the main body 10 of the disposable vessel, pour hot water into the disposable vessel, and close the cover 20 on the main body 10 of the disposable vessel to cook the instant foods.

Referring to FIGS. 3A and 3B, the indicating unit 21, 31 is composed of a transparent synthetic resin material, and an inner surface of the indicating unit 21, 31 is coated with a material well known in the art which is harmless to humans and prevents harmful substances from being emitted from the synthetic resin material to the instant foods so as to shield the instant foods from being mixed with the harmful substances emitted from the synthetic resin material by heat. Additionally, the indicating unit 21, 31 has two or more grooves, and the grooves have different levels, thus temperature-sensitive material layers 22, 32 in the grooves have different heights.

When the indicating unit 21 is installed on the cover 20, the grooves of the indicating unit 21 in which the temperature-sensitive material is packed may be formed in an embossing manner or an intaglio manner. In this regard, when the grooves of the indicating unit 21 are formed in the embossing manner, the message member 40 is layered on the temperature-sensitive material layers after

the temperature-sensitive material is packed in the overturned indicating unit 21, and a polyester (PE) film is covered on the temperature-sensitive material 22 or 32. Additionally, when the grooves of the cover 20 are formed in the intaglio manner, the temperature-sensitive material 22 may be packed in the grooves of the indicating unit 21 before or after the message member 40 is put in the grooves of the indicating unit 21, thereby the message member 40 is positioned on or under the temperature-sensitive material layers. The polyester film is then covered on the temperature-sensitive material.

Furthermore, when the indicating unit 31 is installed on the sealing member 30, it is attached to the sealing member 30 after the indicating unit 31 is formed through the same method as the case that the indicating unit 21 is installed on the cover 20.

The indicating unit 21, 31 must have two or more grooves, and the grooves have different levels. At this time, shapes of the grooves depend on a shape of the message member 40.

The temperature-sensitive material 32 useful in the present invention is plastic fats and oils not in an emulsion state but in a semi-solid state used as a raw material to process foods such as confectionery and breads. Additionally, the temperature-sensitive material 32 is opaque at room temperature, but becomes a transparent liquid at about 40 to 45℃. Hence, the consumers may confirm the letters or drawings marked on the message member 40 through the temperature-sensitive material layer when the temperature-sensitive material 32 is transparent.

A detailed description will be given of the operation of the cooking state and completion indicator of the instant foods. The cover 20 or the sealing member 30 having the indicating unit 21, 31 is separated from the main body 10 of the disposable vessel to stuff powdered dressing materials and pour hot water into the disposable vessel. The cover 20 or sealing member 30 having the indicating unit 21, 31 is then covered on the main body 10 of the disposable vessel.

When heat emitted from the hot water is transferred to the cover 20 or

sealing member 30, the temperature-sensitive material layers 22 or 32 packed in the indicating unit 21, 31 become the transparent liquid in such a way that a temperature-sensitive material layer with a lowest height becomes firstly transparent and a temperature-sensitive material layer with a highest height becomes transparent last of all.

In other words, because the temperature-sensitive material layers 22 or 32 with different heights are formed in the indicating unit 21, 31, when heat emitted from the hot water is transferred to the temperature-sensitive material layers 22 or 32, a P1 layer, a P2 layer, and a P3 layer constituting the temperature-sensitive material layers 22 or 32 become sequentially transparent, thus the consumers may confirm the cooking state by looking the letters or drawings marked on the message member 40 in the indicating unit 40 as shown in FIGS. 3A and 3B. At this time, the P1 layer has a lowest height among other temperature-sensitive material layers.

Heights of the temperature-sensitive material layers 22 or 32 are determined in the consideration of a usual cooking time of the instant foods and a time consumed until the temperature-sensitive material 22 or 32 is transparent. At this time, the usual cooking time of the instant foods must be the same as the time consumed until the temperature-sensitive material 22 or 32 is transparent.

Industrial Applicability

As apparent from the above description, the present invention provides a cooking state and completion indicator of instant foods characterized in that pattern layers with various heights are installed in a cover of a disposable vessel for containing the instant foods, a temperature-sensitive material is packed in the pattern layers, and a message member is positioned under the pattern layers. When the cover of the disposable vessel is closed after hot water is poured into the disposable vessel, the pattern layers become transparent in such a way that a pattern layer with a lowest height becomes firstly transparent and a pattern layer

with a highest height becomes transparent last of all, thereby letters or drawings marked on the message member positioned under the pattern layers are gradually revealed through the transparent pattern layers to allow the consumers to easily confirm the cooking state of the instant foods. When the letters or drawings on the message member are completely revealed because the pattern layers become completely transparent, the consumers confirm that a cooking of the instant foods is completed. Accordingly, the cooking state and completion indicator of the present invention is advantageous in that it indicates a cooking state of the instant foods to allow consumers to easily identify the cooking state quickly, thereby allowing the consumers to ingest the cooked instant foods and to approximate a cooking completion time of the instant foods to prevent the consumers from wasting time while waiting for the instant foods to be cooked.

Claims

1. A cooking state and completion indicator of instant foods, comprising:

an indicating unit combined with a cover or a sealing member of a disposable vessel for containing the instant foods, and having therein a plurality of pattern layers with various heights;

a temperature-sensitive material filling the pattern layers of the indicating unit; and

a message member positioned under the pattern layers.

FIG.1

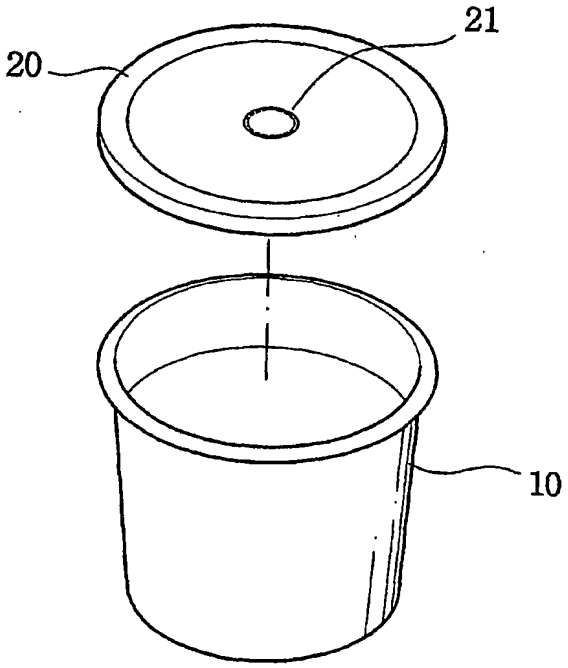


FIG. 2

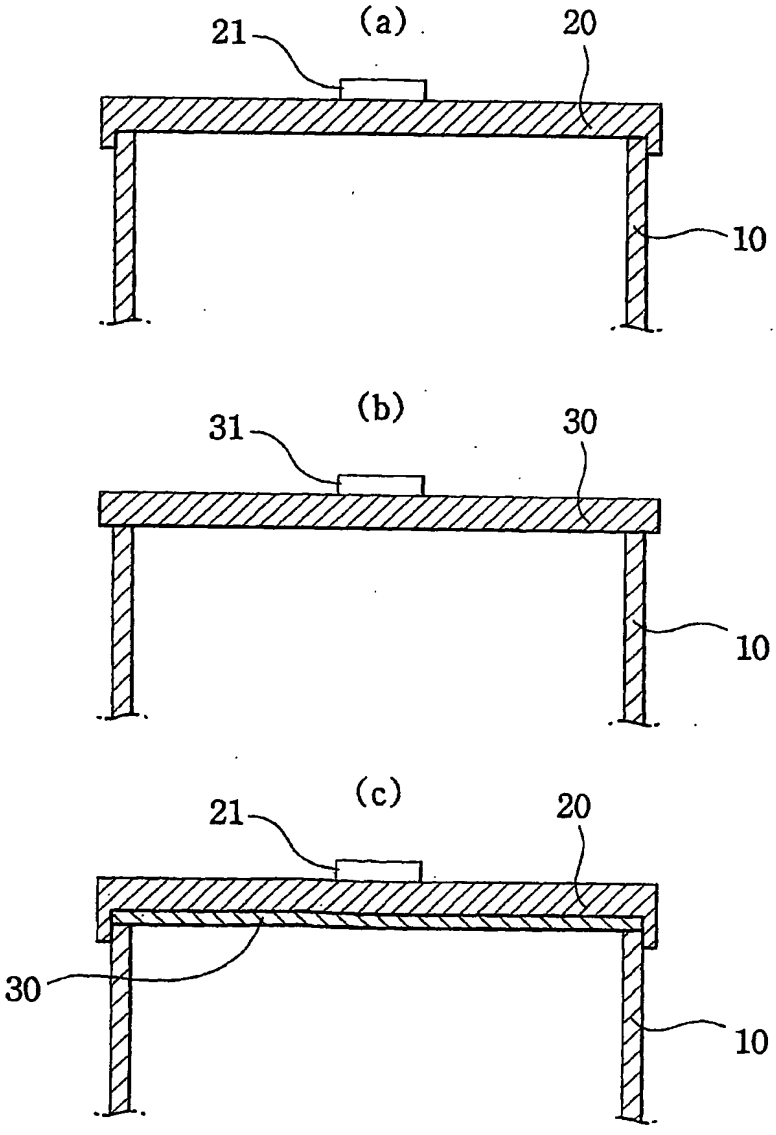


FIG. 3

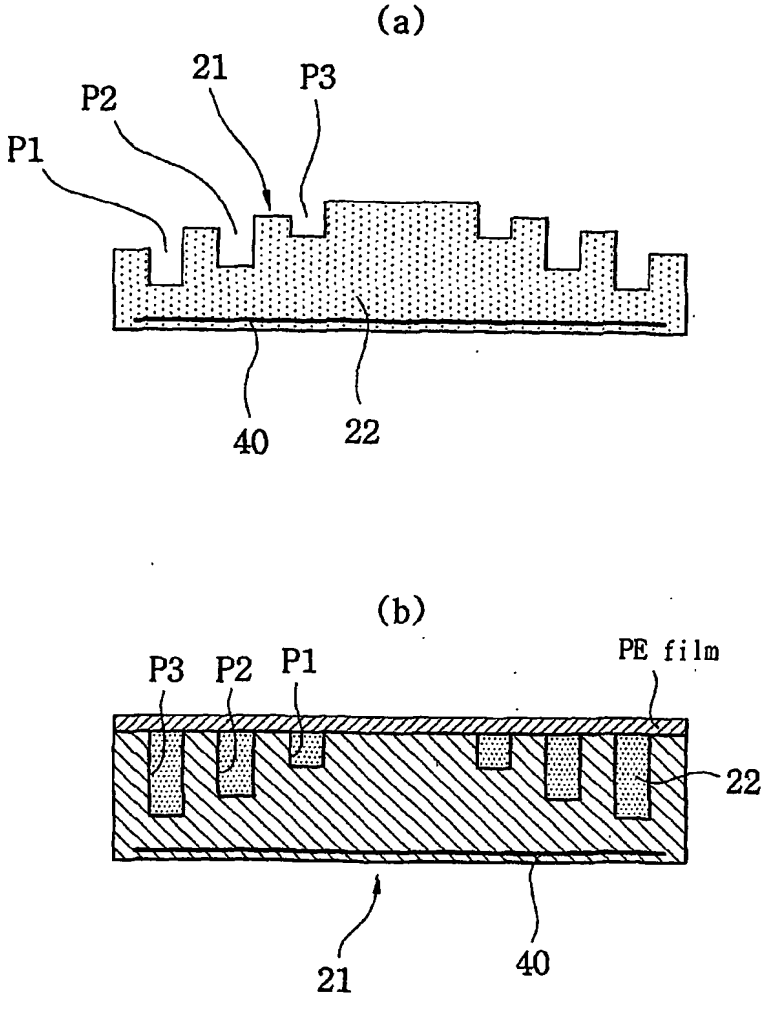


FIG. 4

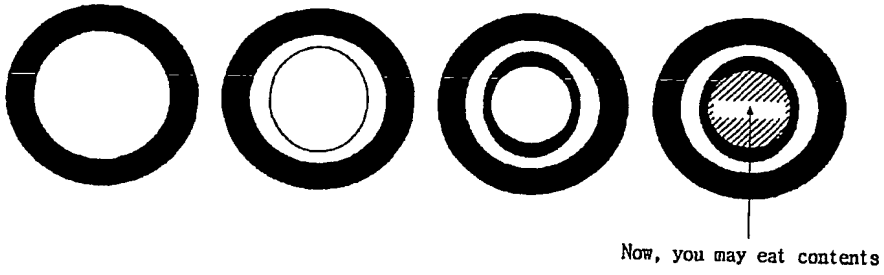
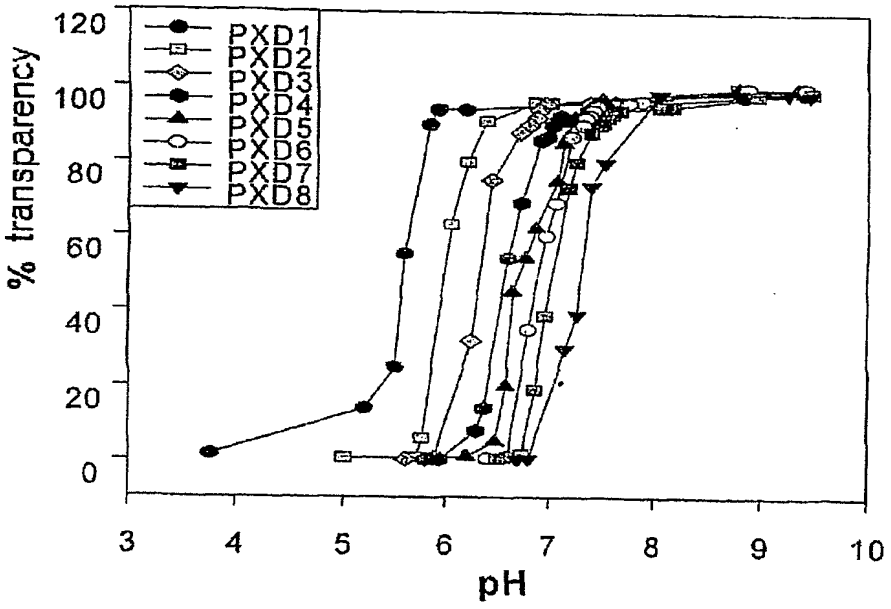


FIG.5


120
100
80
60
40
20
0
% transparency
3
4
5
6
7
8
9
10
pH
PXD1
PXD2
PXD3
PXD4
PXD5
PXD6
PXD7
PXD8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR03/01464

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 B65D 81/34

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC7 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
KR, JP : IPC Classes as above

Electronic data base consulted during the internationl search (name of data base and, where practicable, search terms used)
KIPO eKIPISS system

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2002-059959 A (TABUCHI KAZUMASA) 26 February 2002 (See the Fig 3-L)	1
Y	KR 20-0277760 B (JEON YOUNG HOON) 14 June 2002 (See the whole document)	1
A	JP 2002-127287 A (PILOT INK CO., LTD) 08 May 2002 (See the whole document)	1

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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